

CLAIMS

What is claimed is:

1 1. A network comprising:
2 a first network node; and,
3 a second network node to wirelessly communicate with said first
4 network node, wherein said first network node securely transmits
5 communication signals to said second network node using one or more spatial
6 parameters unique to said second network node.

1 2. The network of claim 1 wherein said one or more spatial
2 parameters include at least one of a position parameter and a velocity parameter.

1 3. The network of claim 2, wherein said communication signals are
2 decodable by said second network node only when said one or more spatial
3 parameters match a corresponding spatial characteristic of said second network
4 node.

1 4. The network of claim 3, wherein said communication signals sent
2 from said first network node to said second network node are encrypted using
3 said one or more spatial parameters, and wherein said communication signals
4 may be decrypted by said second network node using one or more
5 corresponding spatial characteristics of said second network node.

1 5. The network of claim 4, wherein a position, velocity, time (PVT)
2 calculation is used to encrypt said communication signals.

1 6. The network of claim 5, wherein said PVT calculation is used to
2 generate a new signal that can only be demodulated by a recipient node that is
3 located in an intended position.

1 7. The network of claim 1, wherein said communication signals
2 include non-position data and relative position information.

1 8. The network of claim 1, further comprising a master transmitter
2 that sets the basic frequency and phase of said network and said first and second
3 network nodes.

1 9. The network of claim 1, further comprising a plurality of
2 navigation beacons which transmit position signals to said first and second
3 network nodes, and wherein said first and second network nodes are position
4 transponders.

1 10. The network of claim 9, wherein said communication signals are
2 synchronized to said position signals.

1 11. The network of claim 9, wherein said communication signals are
2 used as ranging signals for other network nodes, said other network nodes to
3 determine signal propagation time using signal time tagging.

1 12. The network of claim 9, wherein said position signals are usable for
2 determining absolute positioning information for said first and second network
3 nodes.

1 13. The network of claim 12, wherein said communication signals
2 include non-position data and absolute position information.

1 14. The network of claim 9, wherein said communication signals
2 substitute for said position signals in determining network node position
3 information.

1 15. The network of claim 14, wherein said communication signals are
2 used to provide frequency and signal phase assistance in the determination of
3 node position information.

1 16. The network of claim 15, wherein said frequency and signal phase
2 assistance is used by said first network node to detect attenuated positioning
3 signals from said plurality of navigation beacons.

1 17. A positioning device coupled to a network, comprising:
2 a receiver portion;
3 a transmitter portion;
4 a processor coupled to the receiver portion and transmitter portion; and
5 a memory coupled to the processor to store one or more instruction
6 sequences, said instruction sequences to cause the positioning device to
7 communicate wirelessly with a second positioning device by securely
8 transmitting communication signals to said second positioning device using one
9 or more spatial parameters unique to said second network node.

1 18. The positioning device of claim 17 wherein said one or more spatial
2 parameters include at least one of a position parameter and a velocity parameter.

1 19. The positioning device of claim 18, wherein said communication
2 signals are decodable by said second positioning device only when said one or
3 more spatial parameters match a corresponding spatial characteristic of said
4 second positioning device.

1 20. The positioning device of claim 19, wherein said communication
2 signals sent from said positioning device to said second positioning device are
3 encrypted using said one or more spatial parameters, and wherein said
4 communication signals may be decrypted by said second positioning device
5 using one or more corresponding spatial characteristics of said second
6 positioning device.

1 21. The positioning device of claim 20, wherein a position, velocity,
2 time (PVT) calculation is used to encrypt said communication signals.

1 22. The positioning device of claim 21, wherein said PVT calculation is
2 used to generate a new signal that can only be demodulated by a recipient node
3 that is located in an intended position.

1 23. The positioning device of claim 17, wherein said communication
2 signals include non-position data and relative position information.

1 24. The positioning device of claim 17, further comprising a master
2 transmitter that sets the basic frequency and phase of said network and said
3 positioning device and second positioning device.

1 25. The positioning device of claim 17, further comprising a plurality of
2 navigation beacons which transmit position signals to said positioning device
3 and second positioning device, and wherein said positioning device and second
4 positioning device are position transponders.

1 26. The positioning device of claim 25, wherein said communication
2 signals are synchronized to said position signals.

1 27. The positioning device of claim 25, wherein said communication
2 signals are used as ranging signals for other positioning devices, said other
3 positioning devices to determine signal propagation time using signal time
4 tagging.

1 28. The positioning device of claim 25, wherein said position signals
2 are usable for determining absolute positioning information for said positioning
3 device and second positioning device.

1 29. The positioning device of claim 28, wherein said communication
2 signals include non-position data and absolute position information.

1 30. The positioning device of claim 25, wherein said communication
2 signals substitute for said position signals in determining position information.

1 31. The positioning device of claim 29, wherein said communication
2 signals are used to provide frequency and signal phase assistance in the
3 determination of position information.

1 32. The positioning device of claim 31, wherein said frequency and
2 signal phase assistance is used by said positioning device to detect attenuated
3 positioning signals from said plurality of navigation beacons.

1 33. A method comprising:
2 encoding communication signals using one or more spatial parameters
3 unique to a second network node;
4 transmitting said communication signals from a first network node to the
5 second network node, said first and second network nodes to comprise a
6 wireless network;
7 receiving said communication signals by said second network node; and

8 decoding said communication signals by said second network node when
9 said one or more spatial parameters match a corresponding spatial characteristic
10 of said second network node.

1 34. The method of claim 33 wherein said one or more spatial
2 parameters include at least one of a position parameter and a velocity parameter.

1 35. The method of claim 34, further comprising encoding said
2 communication signals using a position, velocity, time (PVT) calculation.

1 36. The method of claim 35, generating a new signal using said PVT
2 calculation, where said new signal can only be demodulated by a recipient node
3 that is located in an intended position.

1 37. The method of claim 33, wherein said communication signals
2 include non-position data and relative position information.

1 38. The method of claim 33, further comprising setting the basic
2 frequency and phase of said network and said first and second network nodes
3 using a master transmitter.

1 39. The method of claim 33, further comprising transmitting position
2 signals from a plurality of navigation beacons to said first and second network
3 nodes where said first and second network nodes are position transponders.

1 40. The method of claim 39, wherein said communication signals are
2 synchronized to said position signals.

1 41. The method of claim 39, further comprising using said
2 communication signals as ranging signals for other network nodes, said other
3 network nodes to determine signal propagation time using signal time tagging.

1 42. The method of claim 39, further comprising using said position
2 signals to determine absolute positioning information for said first and second
3 network nodes.

1 43. The method of claim 42, wherein said communication signals
2 include non-position data and absolute position information.

1 44. The method of claim 39, wherein said communication signals
2 substitute for said position signals in determining position information.

1 45. The method of claim 43, further comprising using said
2 communication signals to provide frequency and signal phase assistance in the
3 determination of position information.

1 46. The method of claim 45, using said frequency and signal phase
2 assistance by said first network node to detect attenuated positioning signals
3 from said plurality of navigation beacons.